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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/589,881	06/09/2000	Jeongmin Moon	3430-0105P	1734

7590 09/23/2004  
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EXAMINER

NGUYEN, HOAN C

ART UNIT PAPER NUMBER

2871

DATE MAILED: 09/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

<b>Application No.</b> 09/589,881	<b>Applicant(s)</b> MOON, JEONGMIN	
<b>Examiner</b> HOAN C. NGUYEN	<b>Art Unit</b> 2871	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1)  Responsive to communication(s) filed on 6/8/04
- 2a)  This action is **FINAL**.                      2b)  This action is non-final.
- 3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4)  Claim(s) 1-4, 6-11, 14-21, 23 and 24 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5)  Claim(s) \_\_\_\_\_ is/are allowed.
- 6)  Claim(s) 1-4, 6-11, 14-21 and 23-24 is/are rejected.
- 7)  Claim(s) \_\_\_\_\_ is/are objected to.
- 8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9)  The specification is objected to by the Examiner.
- 10)  The drawing(s) filed on \_\_\_\_\_ is/are: a)  accepted or b)  objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All    b)  Some \*    c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1)  Notice of References Cited (PTO-892)
- 2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3)  Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 11/20/03
- 4)  Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5)  Notice of Informal Patent Application (PTO-152)
- 6)  Other: \_\_\_\_\_

## DETAILED ACTION

### *Response to Amendment*

Applicant's arguments with respect to Amended claims 1, 10-11 and 21 based on the amendment filed on June 8, 2004 have been considered but are moot in view of the new ground(s) of rejection.

Applicant cancelled claims 5, 12-13 and 22. Therefore, ONLY claims 1-4, 6-11, 14-21 and 23-24 are pending.

Claims 1-4, 6-9, 11 and 14-21 and 23-24 reject with the same ground as last non-final rejection with inherent property of light guide plate; claim 10 reject with new ground with reference provided in IDS.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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1. Claims 1-4, 6-9, 11 and 14-21, 23 and 24 are rejected under 35 U.S.C. 102(e) as being anticipated by Shinji et al. (US6259854B1).

In regard to claims 1 and 2, Shinji et al. (Figs. 1 a-15b) disclose an auxiliary light source device comprising:

- a light source 1;
- a light reflecting member (reflector 4) which guides light from the light source into the light directing member,
- a light directing member 3 for directing incident light from the light source toward the reflector, with this structure of the light directing member 3, the light ray L4 can be outwardly along an orthogonal direction if L4 strikes the convex portion at different angle (see Attachment).
- the light directing member including
  - a lower surface having a plurality of convex portions extending from the lower surface, each of the convex portions having a substantially planar surface which is substantially parallel to the lower surface, and an angle between the lower surface and a surface connecting the planar surface of the convex portion is about  $90^\circ$  since slope angle  $\delta = 0^\circ$  or  $2^\circ$  (col. 7 lines 5-6).

wherein light reflected along an orthogonal direction L2/L3 to the liquid crystal display device is uniform (to emit primary light inputted from the side end plane of the light guide uniformly, in abstract and col. 1 lines 27-28) according to Figs. 5 ( $\delta = 0^\circ$ ) or Fig. 6 ( $\delta = 2^\circ$ ) or Fig. 7 ( $\delta = 5^\circ$ ).

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In regard to claims 21 and 24, Shinji et al. (Figs. 1 a-1 5b) disclose an auxiliary light source device comprising:

- a light source 1 extending along a width of the reflector to emit light along a length of the reflector 4;
- a light directing device 3 located above the reflector 4 and adjacent to the light source to direct light from the light source to the reflector such that a light distribution of light directed by the light directing device is substantially uniform along the length of the reflector, and such that the directed light is substantially perpendicular to the reflector;
- the light-directing device 3 includes a plurality of portions extending toward the reflector at a  $90^\circ$  angle such that the light reflected along an orthogonal direction L2/L3 to the liquid crystal display device is uniform (to emit primary light inputted from the side end plane of the light guide uniformly, in abstract and col. 1 lines 27-28) according to Figs. 5 ( $\delta = 0^\circ$ ) or Fig. 6 ( $\delta = 2^\circ$ ) or Fig. 7 ( $\delta = 5^\circ$ ), spacing between the portions decreasing along the length of the reflector with increasing distance from the light source. With this structure of the light directing member 3, the light ray L4 can be outwardly along an orthogonal direction if L4 strikes the convex portion at different angle (see Attachment)

In regard to claims 11 and 14, Shinji et al. (Figs. 1 a-15b) disclose an auxiliary light source device comprising :

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- an upper reflective surface to reflect impinging light above a certain incidence angle; Example see in Fig. 2, upper reflective surface is 3c.
- a lower reflective surface 3a having a plurality of convex portions extending toward the reflector to direct light from the auxiliary light source device to the reflector outwardly along an orthogonal direction; with this structure of the light directing member 3, the light ray L4 can be outwardly along an orthogonal direction if L4 strikes the convex portion at different angle (see Attachment)
- an entry surface facing to the light source 1 connecting the upper and lower reflective surfaces through which light from a light source enters,
  - each convex portion includes a planar portion and sides connecting the planar portion with the lower reflective surface, and an angle between the lower surface and the sides is about  $90^\circ$  since slope angle  $\delta = 0^\circ$  or  $2^\circ$  (col. 7 lines 5-6) or  $5^\circ$  (col. 6 lines 62).
  - light reflected along an orthogonal direction L2/L3 to the liquid crystal display device is uniform (to emit primary light inputted from the side end plane of the light guide uniformly, in abstract and col. 1 lines 27-28) according to Figs. 5 ( $\delta = 0^\circ$ ) or Fig. 6 ( $\delta = 2^\circ$ ) or Fig. 7 ( $\delta = 5^\circ$ ).
  - a planar portion is substantially parallel to the lower reflective surface.

In regard to claims 3 and 19, Shinji et al. (Figs. 1b-1g and 15b) disclose an auxiliary light source device, wherein spacing between the convex portions decreases with increasing distance from the light source as shown in a graph of Fig. 15b.

In regard to claims 4, 20 and 23, Shinji et al. (Fig. 15a) disclose the spacing between adjacent convex portions of lower surface of the light-directing member is  $100\mu\text{m}$  (Fig. 15a) that is in a range of  $10\mu\text{m}$  to  $1000\mu\text{m}$  and a width  $W$  of each portion is from  $20\mu\text{m}$  to  $200\mu\text{m}$ , which covers a width less than  $100\mu\text{m}$  (abstract).

In regard to claims 6 and 15, Shinji et al. (Fig. 1 b) disclose the planar surface of each convex portion has a cross-section of substantially circular shape (Fig. 1 b).

In regard to claims 7 and 16, Shinji et al. (Fig. 1f) disclose the planar surface of each convex portion has a cross section of rectangular shape (Fig. 11f),

In regard to claims 8 and 17, Shinji et al. (Fig. 1 d or 1 g) disclose the plane surface of the plurality of convex portions has a bar shape extending perpendicular to a direction of light propagation in the light directing member 11 and along substantially an entire width of the reflective LCID device.

In regard to claim 9, Shinji et al. (Fig. 15b) disclose (Table 1) a distance/height between the lower surface and the planar surface of each convex portion is  $12\mu\text{m}$  and  $20\mu\text{m}$  that is less than  $50\mu\text{m}$ .

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In regard to claim 18, Shinji et al. (Fig. 15b) disclose a plurality of convex portion extending from the lower surface to ensure an uniform distribution of light along a length of the device (in abstract).

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claim 10 is rejected under 35 U.S.C. 102(b) as being anticipated by Funamoto et al. (EP 08878720A) in applicant's IDS.

Funamoto et al. teach (Fig. 10, third embodiment, page 8 line 53 to page 9 line 35) a reflective liquid crystal display device, comprising:

- a display panel 102 inherently including two substrates spaced apart, liquid crystal sandwiched between the two substrates, and
- a reflector 103 to reflect light through the liquid crystal;
- an auxiliary light source device for supplying light to the display panel, including,
  - a light source 2,
  - a light directing member (light guide plate 11) for directing incident light from the light source toward the display panel, the directing member having a lower surface having a plurality of convex portions, each having a substantially planar surface which is substantially parallel to the lower surface, an angle between the lower surface and a surface connecting the planar surface of the convex portion being about  $90^\circ$ , wherein light reflected along an orthogonal direction to the display panel is uniform



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which is inherent with this structure of convex portions at surface of light directing member (light guide plate 11),

- a light reflecting member which guides light from the light source into the light directing member, said display panel being between said auxiliary light source and said light reflecting member.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HOAN C. NGUYEN whose telephone number is (571) 272-2296. The examiner can normally be reached on MONDAY-THURSDAY:8:00AM-4:30PM.

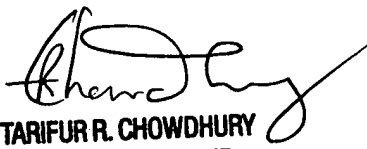
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim H Robert can be reached on (571) 272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HOAN C. NGUYEN  
Examiner  
Art Unit 2871

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TARIFUR R. CHOWDHURY  
PRIMARY EXAMINER